

**SINGLE AND MULTIPLE WAVELENGTH REFLECTION**  
**AND TRANSMISSION FILTER ARRANGEMENTS**

**Abstract of the Invention**

A basic reflector arrangement has first and second power  
5 splitters. The first power splitter has first, second, third,  
and fourth ports where the first port is coupled to a remote  
signal source for receiving signals therefrom and providing  
feedback signals thereto. Signals received at each of the first  
and fourth ports are combined and split into first and second  
10 portions for transmission via the second and third ports,  
respectively, and signals received at the second and third ports  
are combined and split into first and second portions for  
transmission via the first and fourth ports, respectively. The  
second power splitter has first, second, third, and fourth ports,  
15 where the second port is coupled to provide an output signal from  
the reflector arrangement, and the first, third, and fourth ports  
are coupled to the second, third, and fourth ports, respectively,  
of the at least one first power splitter. Various components  
such as transmission filters, filter/multiplexers, and delay  
20 lines can be added in paths coupling the first and second power  
splitters for processing the reflector output and feedback  
signals.